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Draft Cost Estimates for the Task Force's Recommendations
for the April 24, 2003 Task Force Discussion

To inform the Task Force's deliberations about possible funding recommendations, the project team has developed the following preliminary draft cost estimates of the draft Task Force recommendations. These figures represent mid-range, ballpark (i.e., +/- 50%) estimates developed based on available information using the assumptions listed in the table. The estimates are intended to provide a general sense of the level of financial resources that might be needed to implement the Task Force recommendations. They are not detailed estimates for budgeting purposes; actual costs will deviate from these estimates.

It is important to see these estimates in the full context of the draft Task Force recommendations. The estimates are designed to give information on activity costs; however, it should not be assumed that the implementing entity will necessarily bear the full costs of the activity. For example, residents who choose sampling will not likely bear the full cost given Task Force recommendations to subsidize sampling activities. Similarly, because most of the Task Force recommendations rely on individuals to make choices about how to live with area-wide soil contamination based on their own values and lifestyles, it should not be assumed that all of the activities for which cost estimates have been prepared will be carried out at every property affected by area-wide soil contamination.

The estimates evaluate unit costs for each activity (e.g., the cost of sampling at one school) as well as costs for the first 10 years of implementation of the recommendations (e.g., the cost of sampling 400 schools over 10-years). The statewide cost estimates are highly dependent on the number of places the activities are implemented (e.g., the number of residential property owners choosing to implement additional protective measures) as well as other factors.

Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
1. Maps of Area-Wide Soil Contamination <div style="text-align: right;"> Funding Sources: MTCA Remedial Action Grants - Site Hazard Assessment Grants MTCA Remedial Action Grants - Site Study and Remediation Grants State Toxics Control Account; EPA Regional Geographic Initiative Funding Bullitt Foundation CUSP Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties Superfund/CERLA </div>			
Initial Scoping Studies for Lead Arsenate Maps	\$10,000	\$100,000	For 10 counties
Tier 1 Lead Arsenate Maps (by County)	\$5,000	\$50,000	For 10 additional counties, based on costs for existing tier 1 county maps
Tier 2 Lead Arsenate Maps (Identifying Orchards)	\$35,000 (\$25K + \$10K scoping study)	\$350,000	For 10 additional counties, based on costs for Yakima tier 2 orchards map
Defining Area-Wide Zones	TBD		
Data Management, Maintaining/Updating Maps	\$18,000/yr	\$180,000	Assumes 0.2 FTE

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Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
<i>Subtotal for Maps</i>		<i>>\$580,000</i>	
2. Broad-Based Education and Awareness Building <div> Funding Sources: MTCA Public Participation Grants MTCA Remedial Action Grants - Site Study and Remediation Grants OCD; CDBG State Toxics Control Account CDC EPA Environmental Education Grants EPA Environmental Justice Small Grants EPA Regional Geographic Initiative Funding EPA Tribal Lead Program Development Grants HUD Bullitt Foundation CUSP Home Depot Grant Program Seattle Foundation Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties Superfund/CERLA </div>			
Developing Educational Materials, Providing Training and Support	\$150,000/yr	\$900,000	Assumes 1 FTE and \$50K/yr in materials & contract support for 6 of 10 years
Education Program Implementation (by Local Health Jurisdictions)	\$120,000/yr (large populations), \$65,000/yr (small populations)	\$6.3 million	Assumes King & Pierce County health depts. use 1 FTE; the other 6 high-likelihood counties ¹ use 0.5 FTE
<i>Subtotal for Education</i>		<i>\$7.2 million</i>	
3. Child-Use Areas <div> Funding Sources: Interagency Committee for Outdoor Education, Washington Wildlife & Recreation Program MTCA Remedial Action Grants - Sites Hazard Assessment Grants MTCA Remedial Action Grants - Site Study and Remediation Grants MTCA Remedial Action Grants – Voluntary Cleanup Program Grants School Construction Assistance Program Grants </div>			

¹ For the purposes of these estimates, “high-likelihood counties” are those counties that have the greatest numbers of acres potentially affected by smelter emissions and/or use of lead arsenate pesticides. These counties are King, Pierce, Snohomish, Stevens, Chelan, Okanogan, Spokane, and Yakima counties.

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Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
State Toxics Control Account EPA Environmental Justice Small Grants EPA Regional Geographic Initiative Funding Bullitt Foundation CUSP Home Depot Grant Program Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties Superfund/CERCLA			
Qualitative Evaluations (Child-Use Areas)	\$50	\$105,000	\$50 for 1 hour assistance / one-on-one education--2,100 child-use areas (100% participation) ²
Sampling – Schools	\$4,000	\$1.6 million	400 schools
Sampling – Parks	\$3,000	\$1.5 million	500 parks
Sampling – Childcare Centers & Family Home Daycares	\$2,000/center, \$1,600/family home	\$2 million	300 childcare centers; 900 family homes
<i>Subtotal: Property Evaluations</i>		<i>\$5.2 million</i>	
Individual Protection Measures	minimal	minimal	
Woodchips + Barrier in Play Areas – Schools	\$15,000	\$4.5 million	0.5 acre treated at 300 schools (75% of total) – actual costs lower if some cover is in place
Woodchips + Barrier in Play Areas – Parks	\$30,000	\$11 million	Assumes 1 acre treated at 375 parks (75% of total) – actual costs lower if cover in place
Woodchips + Barrier in Play Areas – Childcare Centers & Family Home Daycares	\$12,000/center, \$6,000/family home	\$6.8 million	Assumes 0.4 acre treated at 225 centers, 0.2 acre treated at 675 family homes (75% of total) – actual costs lower if some cover is in place
Clean Soil Cover – Sports Fields	\$32,000	\$16 million	0.5 acres treated at 500 sports fields (e.g., baseball field lines)
Maintenance of Grass Cover – Schools	\$15,000 elementary school, \$30,000 high/middle school ³	\$27 million	3 acres seeded at 200 elementary schools, 6 ac. @100 high/middle schools; every 5 yrs
Maintenance of Grass Cover –Parks	\$25,000 ⁴	\$47 million	5 acres seeded at 375 parks every 5 years
<i>Subtotal: Protection Measures</i>		<i>\$110 million</i>	

² Child-use area numbers (2,100 total child-use areas: 400 schools, 500 parks, 300 childcare centers, 900 family homes) represent the project team's estimates (+/- 50%) of the number of child-use areas in areas affected by lead arsenate and/or smelter emissions in 8 high-likelihood counties; they are based on information from local health departments, OSPI, and DSHS. These numbers represent about 15% of all schools statewide and about 13% of all licensed childcare facilities statewide.

³ Estimates are for costs in addition to regular maintenance costs; estimates will be revised based on information on typical maintenance costs for grass areas at schools.

⁴ Estimates are for costs in addition to regular maintenance costs; estimates will be revised based on information on typical maintenance costs for grass areas at parks.

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Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
Development of Daycare Certification Program	\$50,000	\$50,000	Assumes implementation costs for education covered in above, minimal administrative costs
<i>Total Child-Use Areas (not including education, maps)</i>		<i>\$120 million</i>	
4. Residential Areas <div style="text-align: right;"> Funding Sources: MTCA Remedial Action Grants - Sites Hazard Assessment Grants MTCA Remedial Action Grants - Site Study and Remediation Grants MTCA Remedial Action Grants – Voluntary Cleanup Program Grants State Toxics Account EPA Environmental Justice Small Grants EPA Geographic Initiative Funding; Bullitt Foundation CUSP Home Depot Grant Program Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties Superfund/CERCLA </div>			
<i>Residential Soil Sampling Options</i>			
Residential Sampling: do-it-yourself sampling and lab analysis ⁵	\$200	\$10 million	\$50/sample, 4 samples/ property; for 50,000 residences
Residential Sampling: do-it-yourself sampling + mobile XRF analysis, onsite education	\$130,000/yr staffing & maintenance (8 counties) + \$30,000 per XRF machine	\$1.4 million ⁶	XRF analysis & education provided 4 times per year (3-days each) in 8 high-likelihood counties, with 3 XRF machines
Individual Protection Measures	minimal	minimal	
<i>Options for Additional Protection Measures at Residential Properties – Soil Covers/Caps</i>			
Grass Cover (Using Hydroseed) – Residences	\$300 (\$500 with surface preparation)	\$15 million	0.1 acre treated at 50,000 residences – actual costs lower if some grass cover is in place
Woodchips + Barrier – Residences	\$3,000	\$150 million	0.1 acre treated with 6” deep woodchips at 50,000 residences – actual costs lower if some

⁵ By comparison, sampling conducted by trained consultants or agency staff is estimated to cost about \$1,600 per residence, or \$80 million for 50,000 residences.

⁶ Costs are largely independent of the number of residents participating. If 5,000 residents participate per year (50,000 over 10 years), providing this service costs \$28 per resident.

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Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
			wood/other cover is in place
Clean Soil Cover (with Barrier & Hydroseed) – Residences	\$6,400	\$320 million	0.1 acre treated at 50,000 residences; 6" deep soil – actual costs lower if some soil cover is in place
Soil for Raised Garden Bed – Residences	\$500	\$25 million	18" of soil for 10'x10' garden at 50,000 residences, using avg. costs for bulk & bagged soil at Seattle-area nurseries
Benchmarking Estimates—Protection Measures at Residences (Not Recommended in Most Cases)			
Soil Blending/Tilling (6" deep contamination) – Residences	\$9,000 (\$5K w/o mobilization charge for equipment)	\$450 million	0.1 acre treated at 50,000 residences; sod replacement
Soil Blending/Tilling (12" deep contamination) – Residences	\$13,000 (\$10K w/o mobilization charge for equipment)	\$650 million	0.1 acre treated at 50,000 residences; sod replacement
Soil Blending/Tilling (18" deep contamination) – Residences	\$16,000 (\$13K w/o mobilization charge for equipment)	\$800 million	0.1 acre treated at 50,000 residences; sod replacement
Soil Removal/Replacement (top 6") – Residences	\$15,000	\$750 million	0.1 acre treated at 50,000 residences; sod replacement
Soil Removal/Replacement (top 12") – Residences	\$26,000	\$1.3 billion	0.1 acre treated at 50,000 residences; sod replacement
Soil Removal/Replacement (top 18") – Residences	\$37,000	\$1.9 billion	0.1 acre treated at 50,000 residences; sod replacement
5. Commercial Areas – Cost Estimates To Be Developed <div> Funding Sources: MTCA Remedial Action Grants - Sites Hazard Assessment Grants MTCA Remedial Action Grants - Site Study and Remediation Grants MTCA Remedial Action Grants – Voluntary Cleanup Program Grants State Toxics Control Account EPA Environmental Justice Small Grants EPA Regional Geographic Initiative Funding Bullitt Foundation CUSP Home Depot Grant Program Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties Superfund/CERCLA </div>			

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Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
6. Vacant Land – Cost Estimates To Be Developed <div> <div></div> <div> Funding Sources: Interagency Committee for Outdoor Recreation, Washington Wildlife & Recreation Program MTCA Remedial Action Grants - Sites Hazard Assessment Grants MTCA Remedial Action Grants - Site Study and Remediation Grants MTCA Remedial Action Grants – Voluntary Cleanup Program Grants OCD; CDBG School Construction Assistance Program State Toxics Control Account EPA Brownfields Grants EPA Justice Small Grants EPA Regional Geographic Initiative Funding Federal Brownfields Tax HUD Bullitt Foundation CUSP Home Depot Grant Program Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties Superfund/CERCLA </div> </div>			
7. Monitoring/Evaluation of Protection Measures <div> <div></div> <div> Funding Sources: State Toxics Control Account EPA Regional Geographic Initiative Funding Bullitt Foundation Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties </div> </div>			
Evaluation of Effectiveness of Education Program in Increasing Implementation of Individual Protection Measures	\$400,000	\$400,000	Assumes baseline + follow-up survey; 0.25 FTE per high-likelihood county over 2 separate years
8. Rulemaking/Policy Development <div> <div></div> <div> Funding Sources: OCD; CDBG State Toxics Control Account EPA Regional Geographic Initiative Funding </div> </div>			

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Activity	Unit Costs (Mid-Range, +/- 50%)	Statewide 10-Year Costs	Notes/Assumptions
			Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties
Changes to Real Estate Disclosure Requirements	TBD		
Adopt New Area-Wide Soil Contamination Enforcement Forbearance Policy	TBD		
Establishing a Self-Executing System for the Alternate MTCA Approach	TBD		
9. Research			
			Funding Sources: MTCA Remedial Action Grants – Site Hazard Assessment Grants MTCA Remedial Action Grants – Site Study and Remediation Grants State Toxics Control Account CDC EPA/NIEHS EPA Regional Geographic Initiative Funding EPA Tribal Lead Program Development Grants NIH Federal and/or State Legislative Appropriations Insurance Potentially Responsible/Liable Parties
Research on Contamination from Leaded Gasoline	\$150,000	\$150,000	For initial study only; assumes ~8-10 acres total sampled around different types of roads
Research on Ecological Risks	TBD		
Health Monitoring Research	\$125,000/year per health district, \$50,000 for startup statewide	\$10 million	For 8 health districts; assumes existing State infrastructure can be used for startup; ~6,000 add'l children tested per year

**All cost figures are general estimates using the assumptions noted.
Estimates are rounded to two significant figures.**